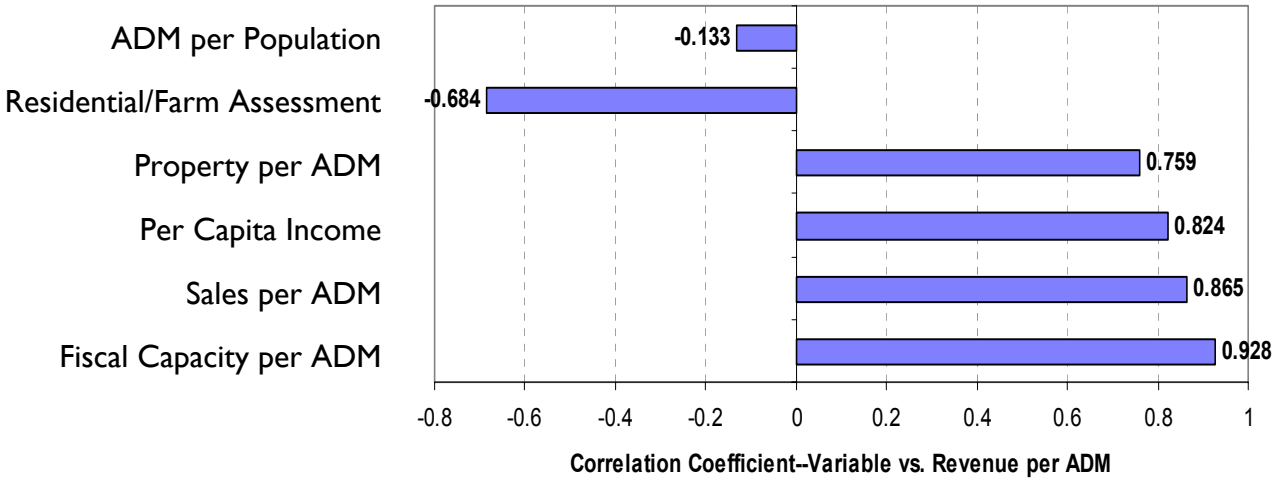
Correlation Analysis

Relationship between Local Revenue per Pupil and Fiscal Capacity Variables for FY 2005

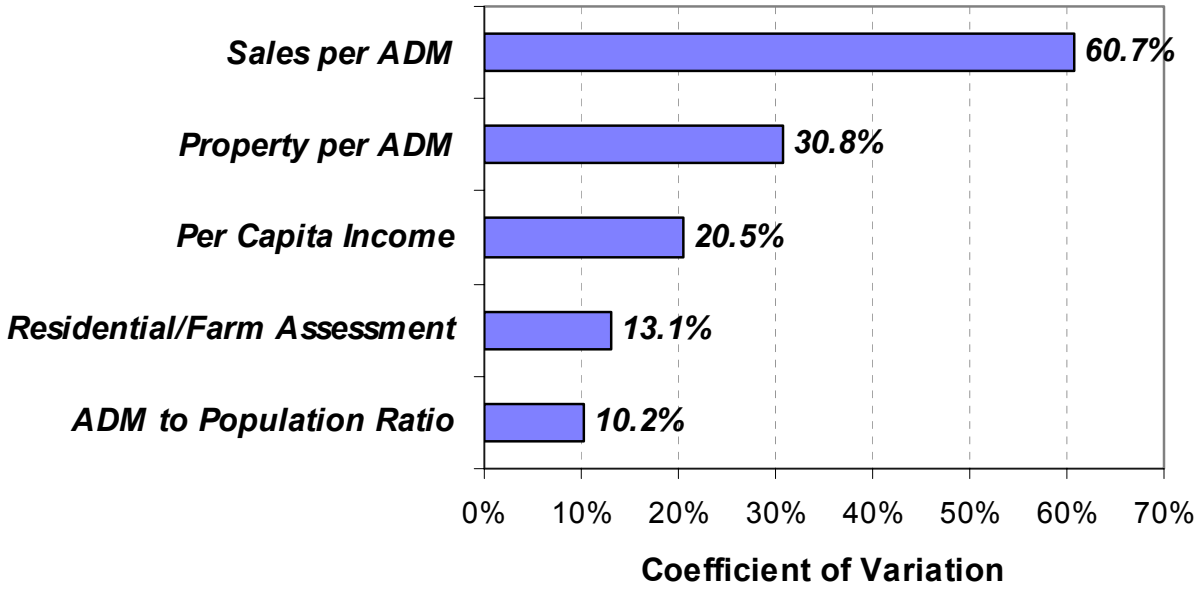


Correlation Analysis

Correlation analysis is a descriptive technique used to measure the strength of the relationship between two variables. The statistic produced is called the coefficient of correlation. Values for the coefficient of correlation range from -1 for a perfect negative correlation up to +1 for a perfect positive correlation. *Perfect* means that if all the points of intersection between a pair of variables were plotted in a scatter diagram, all the points could be connected with a straight line. The closer the coefficient to either +1 or -1, the stronger the relationship. When the coefficient is near zero, little or no relationship exits. In the chart above, the longer the bars, the stronger the relationship. The factors are in order, top to bottom, from weakest to strongest. The factor with the strongest relationship to revenue per pupil is sales per ADM. The correlation coefficient for those two variables is 0.865. Per capita income and property per ADM also have strong relationships to revenue per pupil (0.824 and 0.759 respectively). The existence of a strong correlation does not imply a causation effect; it only indicates the tendencies present in the data.

Dispersion of Variables FY 2005

Coefficient of Variation



Variation Analysis

The coefficient of variation (COV) is a measure of the variation from the average value for a single variable or factor. Technically, it is the standard deviation expressed as a percent of the mean. The large COV for taxable sales indicates very large differences in taxable sales per pupil across the ninety-five counties. The COV for sales is almost double the COV for property, indicating considerably larger differences across counties in their sales tax bases than in their property tax bases. The small COV for ADM per population indicates relatively small differences across the counties for this factor. This comparison indicates that differences among counties in their tax bases are far more significant than differences in school enrollment relative to their population.